United States Department of the Interior
Fish and Wildlife Service

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July 19, 2012

Mr. George Delancey CELRL-OP-FW
U.S. Army Corps of Engineers, Louisville District
Newburgh Regulatory Office
P.O. Box 489
Newburgh, Indiana 47629-0489

Dear Mr. DeLancey:

The U.S. Fish and Wildlife Service (FWS) has reviewed Public Notice #2011-1117, concerning an application by Peabody Midwest Mining for a Department of Army permit, pursuant to Section 404 of the Clean Water Act. The application is for stream and wetland impacts associated with an amendment area to the Bear Run Mine surface coal mining operation in Sullivan County, Indiana (Indiana DNR mining permit #S-256-5).

These comments have been prepared under the authority of the Fish and Wildlife Coordination Act and are consistent with the intent of the National Environmental Policy Act of 1969, the Endangered Species Act of 1973, and the U.S. Fish and Wildlife Service's Mitigation Policy.

The amendment area contains 7252 acres, some portions of which have been previously mined. The public notice states that the proposed water resource impacts include over 514,000 feet of stream channel (258,166' ephemeral 253,217' intermittent, 3115 feet perennial), approximately 158 acres of wetlands (85.2 forested, 45.8 emergent, 8.3 shrub and 18.6 unconsolidated bottom), and 243 acres of open water.

Proposed on-site mitigation would be the creation/replacement of 367.6 acres of forested wetland, 385,415 feet of streams and 240 acres of open water. Lower replacement ratios are being proposed for ephemeral streams and for wetlands in agricultural lands and previously mined lands. Forest buffers would be 100 feet wide on each side for perennial and intermittent streams, and 50 foot wide for ephemeral streams. Proposed off-site mitigation consists of the restoration of 9390 feet of a channelized reach of Busseron Creek and 135 acres of adjacent forested wetlands.

Impacts

This office reviewed the coal mining permit application for Bear Run Amendment #5 in March/April of this year, and inspected portions of the permit area on March 29. Attached is a copy of our comment letter dated April 10, 2012, which includes a summary of observations made during our inspection.

Based on our inspection and a review of maps and photos we concluded that the mining operation would remove over 2000 acres of forest and have significant impacts to streams and wetlands (at that time we had not seen a wetland or stream assessment or a mitigation plan). We noted that the permit area contains abundant habitat for migratory birds and other wildlife, almost all of which would be lost during surface mining. We recommended avoidance of forested stream corridor disturbance for non-extraction activities, replacement of all pre-mining forest, forested stream buffer replacement of 100 feet on each side for natural streams, minimization of wetland impacts and mitigation for unavoidable impacts.

All the above recommendations that relate to water resources and riparian areas should also be applied to the Section 404 permit. Based on the wetland and stream assessments we have the following additional comments and recommendations.

1. The majority of affected wetlands (85 acres of a total of 158 acres) are forested wetlands. All of the largest wetlands (ranging from 5.3 acres to 17.8 acres) area also forested. The rest of the small wetlands are spread out throughout the permit area.

2. The largest concentration of forested wetlands (51 of 85 acres) is associated with the large artificial impoundment in the north-central part of the permit area and the smaller impoundment west of it along CR 500S. We inspected those wetlands and noted that wetlands near the big lake contained mostly small to medium trees but many snags, including river birch, sycamore, silver maple, willows and cottonwood. The understory included large stands of reed-canary grass and a variety of native emergent plants. Wetland north of the small lake contained some larger trees, especially on the bank slopes. That entire wetland was flooded too deeply to walk through at the time of our inspection.

3. The other 2 larger wetlands (6.1 acre and 5.4 acres) are near the south end of the permit area associated with unmined tributaries of Maria Creek. We did not inspect them, but based on the applicant's wetland assessment combined they contain at least 7 tree species dominated by red maple, green ash and American elm.

4. The total wetland impact of 158 acres is very large, however over 60 acres are in previously mined areas, farm land or otherwise previously disturbed. It would be difficult to preserve most of the larger wetlands due to their location in the interior of the permit area. We recommend auger mining to preserve wetlands 4NW 25T1P1 and 4NW103 (7.7 acres combined), which are natural wetlands near the west boundary of the permit area.

Bioassessment

Biological and water quality assessments were conducted at 52 sample points. The report states that all sites except one were conducive to macroinvertebrate sampling, however the data table shows "NA" for 4 sites. All sites were rated as "not fully supporting", all with the lowest possible score of 1 for "number of taxa".

Only 13 sites were sampled for fish. As the report notes, many intermittent streams in the permit area are upper headwater streams, some in disturbed areas, that would likely have an insignificant fish fauna or no fish fauna. As a result, fish sampling sites were concentrated in a few larger streams, with 9 of 13 sites in only 3 streams. We noted that 2 sites found to be conducive to fish sampling (Bio 17 and Bio 47) were higher in the watershed of streams with at least 2 sample sites further downstream that did not include fish sampling. The report states that 2 sites likely supported fish but could not be sampled due to high conductivity (Bio 36) or high turbidity (Bio 31). Bio 31 is the downstream-most point in a stream that had 2 fish sampling sites further upstream, but Bio 36 is in a stream network that did not have any fish sampling points. We recommend sampling that stream when flows are conducive, using a seine if necessary.

IBI scores ranged from 22-40, with the 2 highest scoring sites (Bio 7 and Bio 8) being the 2 downstream-most points on the largest stream (Maria Creek). Both of those sites produce a relatively large number of individuals dominated by bluegill, and contained 3 species not found at any other sites (spotted bass, blackstripe topminnow and spotfin shiner). The results at these sites are indicative that the fish assemblage would have higher richness and diversity further downstream. Only one darter species was collected; a single specimen of slough darter at Bio 47.

Although the results section of the report referred to high conductivities, the water chemistry results did not include conductivities. We recommend adding conductivity data to the report.

Mitigation On-site

We concur that the location of mitigation wetlands is appropriate. Combining wetlands and stream corridors increases their value for wildlife. The post-mining locations of both wetlands and major stream corridors reflects the pre-mining locations of those water resources, however the mitigation plan adds substantial wetland acreage near the north and south ends of the permit area, along stream corridors adjacent to previously mined areas where minimal wetlands currently exist. The overall wetland creation plan, including success criteria, monitoring and adaptive management also appears to be generally acceptable.

The stream replacement plan will reduce the overall length of ephemeral streams by 129,000 feet. This substantially simplifies the post-mining stream system, however we are aware that ephemeral and small intermittent streams are difficult to replace in post-mining landscapes due to unpredictability of groundwater elevations and small surface water drainage patterns. Approximately 50,000 feet of the ephemeral and intermittent streams are ditches in previously mined areas or extensively altered agricultural drainages. The great majority of pre-mining streams (approximately 380,000 feet) are in "mixed" areas, which contain both natural and disturbed components. We have the following comments regarding the stream replacement plan:

1. On page 15 the mitigation plan states that some streams will be temporarily routed through impoundments but will be diverted around permanent impoundments at bond release. Page 2 states that a portion of stream mitigation will flow directly into open waters to mimic the existing condition of many streams. These two statements seem to be contradictory. We recommend that all post-mining intermittent streams, which will have 100 foot stream buffers on each side, be designed to not flow through impoundments.

2. According to the table on pages 9/10 the post-mining stream buffers on natural and mixed ephemeral streams will be reduced from the pre-mining condition. We recommend compensating for that by locating upland forest blocks adjacent to the stream channels.

3. We recommend adding topographic diversity such as sloughs and depressions to all mitigation forested wetlands.

4. The mitigation plans proposes to maximize permanent protection of mitigation wetlands by constructing as much acreage as possible on Peabody property. That proposal is too vague. The plan needs an estimate of how much acreage will be on company lands and what measures will be attempted to secure protection of wetlands on leased land (such as purchasing easements).

5. We recommend developing post-mining habitats for amphibians, many species of which are declining. This should include wetland/grassland habitat for crawfish frogs.

Mitigation Off-site

The proposed off-site mitigation includes 2 components: stream restoration and wetland restoration. The stream restoration consists of reconnecting a 5315 foot reach of the original (pre-channelization) meandering Busseron Creek channel to the main channel by diverting flow into it and constructing 4075 feet of new channel to reconnect the downstream end to the main channel. The wetland component consists of planting 135 acres of forested wetland and 4 acres of upland forest buffer on 8 fields adjacent to the stream restoration. The mitigation plan refers to it alternately as “restoration” and “creation”; this inconsistency should be corrected. The plan does not describe how the restoration or creation will be accomplished, although it mentions minor excavation to remove diversions and fill old ditches. Possibly hydrology may already be present in some areas and may be enhanced in other areas by eliminating ditches.

Busseron Creek is a large stream whose floodplain historically contained extensive wetland complexes. This proposed restoration will be a significant addition to the overall mitigation plan. We submit the following comments and recommendations for the off-site mitigation plan.

1. Provide a thorough explanation of how wetland hydrology will be created or restored.

2. Page 10 of the plan lists the proposed stream riffle slope as 2:1, which is typically too steep for a natural channel. It should also list a proposed bank slope for pools.

3. The first wetland mitigation map depicts the location of Fields A – E. All of these fields are in good locations, however there are 2 other locations on the east side of the oxbow reach to be reconnected where there is almost no forest buffer between 2 eastern meanders of the oxbow channel and adjacent fields. The plan should be modified to increase the forest buffer width at both areas to a minimum of 100 feet.

4. Construction of the new 4075 foot channel connection is apparently being proposed because the applicant could not extend the restoration all the way downstream to the point where this original channel reach currently reconnects to the channelized stream. It would be highly preferable to restore the entire reach, for channel configuration, stability and cost. Also, construction of the new channel will require a considerable amount of tree removal in forested wetlands. The wetland restoration will more than offset the loss, however the estimated tree clearing acreage should be quantified in the plan.

5. The 2 cross-sections of the restored channel (old reach and constructed reach) indicate a 2-stage channel configuration. It is likely that the channel will reshape itself over time after receiving the main river flow. There may be some concern about the stability of this high-sinuosity natural reach with channelized reaches both upstream and downstream. This should be addressed in the contingency plan.

Endangered Species

The proposed project is within the range of the Federally endangered Indiana bat (*Myotis sodalis*). This office provided endangered species comments for the mining permit application, and recommended the following conservation measures to minimize take in accordance with our national biological opinion issued to the Office of Surface Mining and rangewide guidelines for Indiana bat protection and enhancement.

1. To prevent incidental take from removal of an occupied roost tree, avoid tree-clearing along waterways and adjacent forested areas during the Indiana bat reproductive season (April 1 - September 30).

2. Drainageways are an essential component of Indiana bat summer habitat. Restore forested drainageways in a network that reflects the pre-mining condition.

3. Restore post-mining forest to be comparable in size and no less diverse that the pre-mining forest, and include species suitable for Indiana bat nursery roosts.

If these measures are implemented this precludes the need for further consultation on this project as required under Section 7 of the Endangered Species Act of 1973, as amended. If project plans are changed significantly, please contact our office for further consultation.

In summary, the proposed mine with temporarily eliminate an enormous amount of wildlife habitat. Upland forest replacement is generally successful, and the quality of the affected wetlands is conducive to compensation. The success of stream replacements on coal mines in Indiana continues to improve, however replacement of the extensive stream networks on this

permit area will be difficult and unpredictable. Wildlife that currently inhabit the area will be mostly lost and the post-mining landscape will have to be repopulated by colonization by wildlife from the surrounding area.

For further discussion please call Mike Litwin at (812) 334-4261 ext. 205.

Sincerely yours,

Scott E. Pruitt
Field Supervisor

cc: Melissa Gebien, U.S. EPA Region V, Aquatic Resources Section, WW-16J, Chicago, IL
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